

storing object 330 is stored as "abnormal" (or simply referred to as "ABNORM."), and the malfunction information of the fourth malfunction-information storing object 340 is stored as "normal". Furthermore, the malfunction information of the fifth malfunction-information storing object 350 is stored as "temporarily abnormal".

Types of malfunction information and the corresponding control operations are indicated in an upper row and in a lower row, respectively, in the relationship information. Thus, upon receiving the control instruction retrieving request from the malfunction-information managing object 200, the malfunction-information storing object 300 selects the corresponding control instruction based on the stored malfunction information and outputs it.

Next, the MIL response process S1, the MIL information output process S2 and the control instruction output process S3 will be described in greater detail for the purpose of promoting an understanding of the operations of the objects 200-400.

First, the MIL response process S1 will be described with reference to a flowchart shown in FIG. 6. This flowchart shows the MIL response process that is carried out by the MIL controlling object 400 when the MIL state renewal request is received from the PF 500.

First, at step (hereinafter, "step" is simply referred to as "S") 100, the MIL controlling object 400 requests the MIL information to the malfunction-information managing object 200. In response to this request, the malfunction-information

managing object 200 outputs the MIL information. When the MIL information is outputted, control moves to S110.

At S110, the vehicle information is acquired. One example of the vehicle information is on/off information of the ignition key.

Next, at S120, it is determined whether a lighting-on condition of the MIL 25 is satisfied based on the MIL information and the vehicle information. If it is determined that the lighting-on condition of the MIL 25 is satisfied (S120: YES), control moves to S130. At S130, a lighting-on instruction is outputted as the MIL response, and the MIL response process ends. On the other hand, if it is determined that the lighting-on condition of the MIL 25 is not satisfied (S120: NO), control moves to S140.

At S140, it is determined whether a flashing condition of the MIL 25 is satisfied based on the MIL information and the vehicle information. If it is determined that the flashing condition is satisfied (S140: YES), control moves to S150. At S150, a flashing instruction is outputted as the MIL response, and the MIL response process ends. On the other hand, if the flashing condition is not satisfied (S140: NO), control moves to S160.

At S160, it is determined whether a lighting-off condition of the MIL 125 is satisfied based on the MIL information and the vehicle information. If it is determined that the lighting-off condition is satisfied (S160: YES), control moves to S170. At S170, a lighting-off instruction is outputted as the MIL response,

and the MIL response process ends. On the other hand, if it is determined that the lighting-off condition is not satisfied (S160: NO), control skips S170, and the MIL response process ends.

5           Next, the MIL information output process S2 will be described with reference to FIG. 7.

FIG. 7 is a flowchart showing the MIL information output process S2 executed by the malfunction-information managing object 200. The MIL information output process S2 is executed when the MIL information request is received from the MIL controlling object 400.

10           First, at S200, the malfunction-information managing object 200 requests each malfunction-information storing object 300 to retrieve the corresponding control instruction. In response to this request, each malfunction-information storing object 300 outputs the control instruction. When the control instruction is outputted, control moves to S210.

15           At S210, it is determined whether all the malfunction-information storing objects 300 have received the control instruction retrieving request. For example, if there are five malfunction-information storing objects, namely, the first to fifth malfunction-information storing objects 310-350, as shown in FIG. 5, it is determined whether all the five malfunction-information storing objects 310-350 have received the control instruction retrieving request. If it is determined that all the malfunction-information storing objects 300 have received the control instruction retrieving request (S210: YES),

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